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STATE FINAL APPROVAL AND ACCEPTANCE OF DELIVERABLE		
APPROVED BY:	**SIGNATURE**	**DATE**
Agency IT Lead:		
Agency Project Manager:	*[signature]*	10/31/12

Distribution	Original: Contractor
	Copies: Project Office - Agency Contract Monitor

Exchange Documentation and Finance Use

☐	RCVD Invoice for Accepted Deliverable # _____ (contact: Karen Robinson-karen.robinson@xerox.com)
☐	Scan Deliverable Acceptance Form & Deliverable Document into single document (naming convention is deliverable # and document name)
☐	e-mail above scan to Xerox Team (Bill DeLange-bill.delange@xerox.com and Michelle Lashley- michelle.lashley@xerox.com)
☐	Validate Cost, Post to Contract Log and Process Payment
☐	Deliver original Deliverable Acceptance Form to Xerox Team
☐	Update online CALT and Exchange CALT File

25. Requirements Management Plan

25.1 Introduction

Given the complexity of functional and technical requirements needed for a Health Insurance Exchange solution, at both the federal and State levels, the Silver State Health Insurance Exchange (Exchange) requires a detailed strategy for developing, disseminating, and managing requirements throughout the System Development Life Cycle (SDLC).

To support the Exchange's SDLC, this Requirements Management Plan (RMP) documents how the Exchange (and its vendors) will manage the system requirements (functional and technical) from initial definition, validation, and refinement, through traceability and implementation. The RMP is designed to help the Exchange create a cohesive list of requirements for a fully functional solution, and provide a means of managing new or changed requirements in order to ensure the solution meets operational needs.

25.1.1 Purpose

The purpose of the RMP is to describe the process for managing the business and technical requirements that define the Exchange's Business Operations Solution (BOS) and for maintaining a requirements baseline. Changes to requirements are anticipated throughout the SDLC as a result of policy decisions, budget constraints, and the complex nature of technical interfacing with States and Federal Agencies. These changes support new and updated processes and specifications and address both policy makers' and end-users' concerns. The RMP acts as a tool that will govern how the requirements that are gathered throughout the project will be managed, updated (as needed), and traced.

The RMP provides the foundation through which well-define requirements will be captured and maintained throughout the life of the project. Key characteristics of a well-defined requirement include:

- **Complete** – Fully describes the functionality to be delivered.

- **Consistent** – Requirements should not conflict with other requirements of the same type or with higher-level business, system, or user requirements.

- **Correct** – Accurately describes the functionality to be built.

- **Feasible** – Can be implemented within the known capacities and limitations of the system and its operating environment.

- **Necessary** – Documents a capability that customers need, or one required to comply with an external system requirement or a standard.

- **Prioritized** – Is assigned an implementation priority (in the case of each functional requirement, feature, or use case) to indicate how essential it is.

- **Unambiguous** – Enables all readers of a requirement statement to arrive at a single, consistent interpretation of it.

- **Verifiable** – Indicates through tests or other verification approaches, such as inspection or demonstration, that it implements the required action properly.

- **Modifiable –** Are structured and styled so that any changes to the requirements can be made easily, completely, and consistently while retaining the structure and style. This requires that the requirements are not redundant, have a coherent and easy to use organization, and that each requirement expresses a unique requirement, rather than being intermixed with other requirements.

- **Traceable** – Can be linked backward to its origin and forward to the design elements and source code that implement it as well as to the test cases that verify it was implemented correctly.

In addition, the RMP serves a central role in helping to manage project scope since defining the requirements and maintaining their integrity defines the scope of the solution. The RMP works in conjunction with other components of the Project Management Plan, as illustrated in

Figure 25-1.

Figure 25-1: RMP Coordination with other Project Management-related Plans
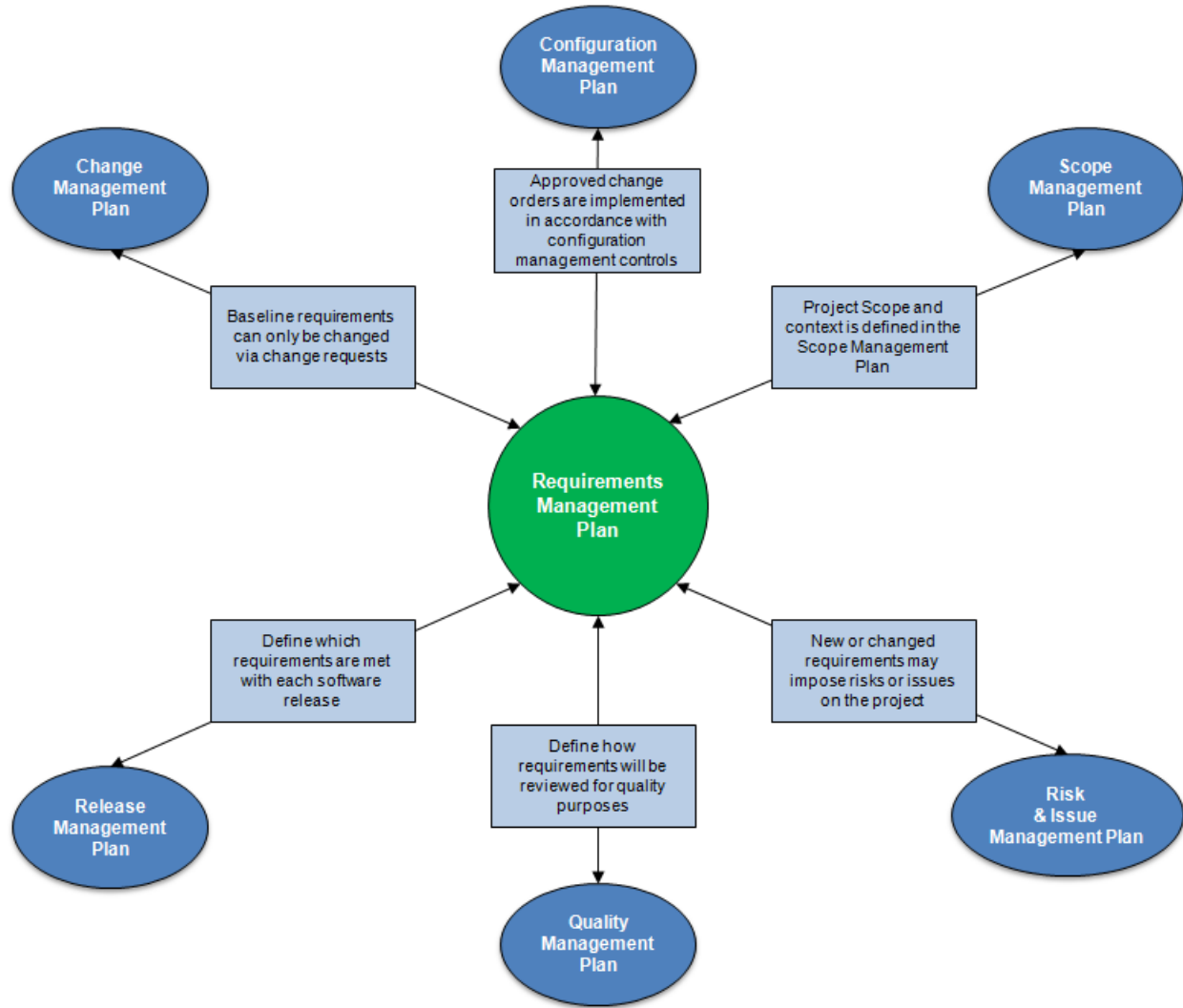
25.1.2   Scope

The RMP addresses how requirements will be managed for the BOS, including all components of the solution, as illustrated in Figure 25-2. As such, the RMP is pertinent to many of the project's phases and activities, including those related to requirements, development, configuration, testing, and implementation.

Figure 25-2: Exchange Technical Solution Functions/Components
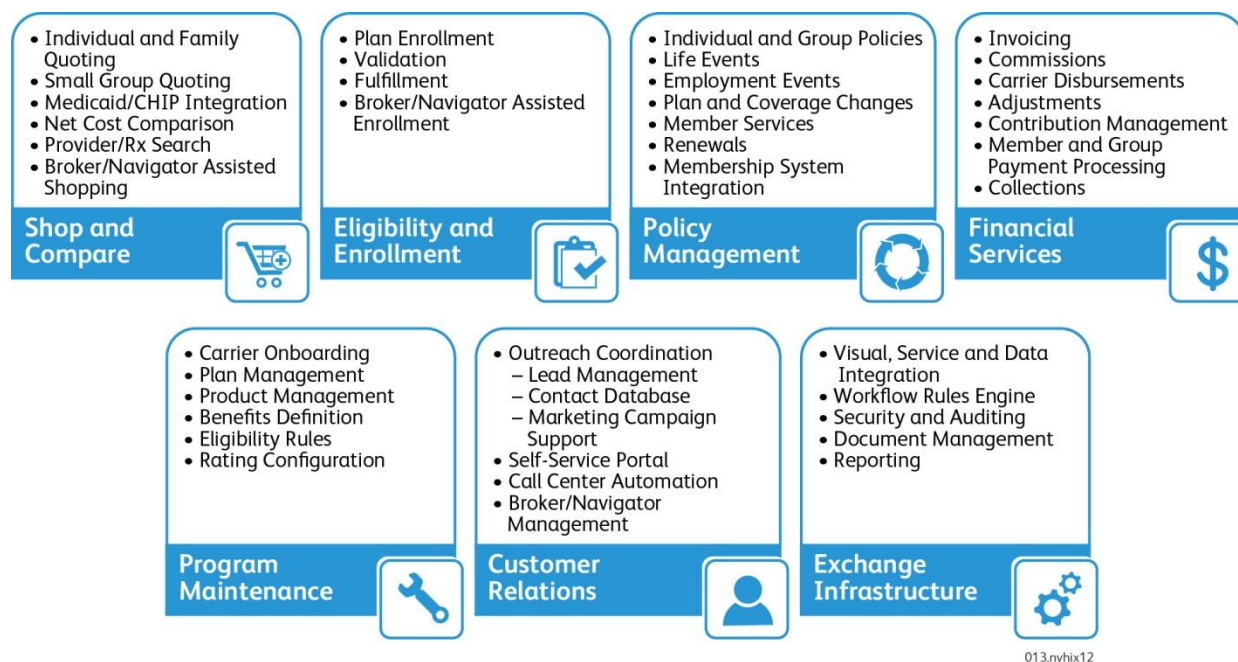
Both business and technical requirements were originally identified by the Exchange prior to selecting a BOS vendor. To develop these requirements, the Exchange solution drew upon a number of information sources, as listed in Table 25-1. These same sources will continue to be utilized throughout the project as requirements are refined, updated, and validated.

Table 25-1: Requirements Sources

#	Source	Description of Source
1.	General Public	User feedback based on web site experience
2.	Federal Government (Agencies)	Mandates including executive orders, public laws, OMB directives, standards
3.	Affordable Care Act (ACA),	Policies, standards, and guidelines
4.	Center for Consumer Information & Insurance Oversight (CCIIO)	Requirements from stakeholder, requirements from internal intermediaries, new/changed business priorities, contract cost/schedule changes, agency policies
5.	Vendor(s)	New system and infrastructure requirements, incidents or defects from system activities
6.	Other Health Insurance Exchanges	Leveraging requirements and details developed by other state health insurance exchanges who are developing hosted solutions or similar functionality

25.1.3   Definitions

The following is a list of terms and acronyms used in the RMP.

Table 25-2: Requirements Management Terms and Acronyms

#	Term/Acronym	Definition
1.	ACA	Affordable Care Act
2.	BOS	Business Operations Solution
3.	CALT	Collaborative Application Lifecycle Management Tool, CMS's on-line collaboration platform
4.	CCB	Change Control Board
5.	CCIIO	Center for Consumer Information & Insurance Oversight
6.	CCR	Change Control Request
7.	CMS	Centers for Medicare and Medicaid Services
8.	CR	Change Request
9.	DED	Deliverable Expectations Document
10.	DOORS	IBM Rational DOORS
11.	Exchange	Silver State Health Insurance Exchange
12.	IEEE	Institute of Electrical and Electronics Engineers
13.	IV&V	Independent Verification & Validation
14.	OMB	Office of Management and Budget
15.	PMBOK	Project Management Body of Knowledge
16.	PMO	Project Management Office
17.	RACS (or RAC)	Requirements and Configuration Sessions
18.	RFP	Request for Proposal
19.	RMP	Requirements Management Plan
20.	RSD	Requirements Specification Document
21.	RTM	Requirements Traceability Matrix (which will be developed in the IBM Rational DOORS software)
22.	RVR	Requirements Validation Review

#	Term/Acronym	Definition
23.	SDLC	System Development Life Cycle
24.	SME	Subject Matter Expert

25.1.4   RMP Contents

The RMP includes the following sub-sections.

- Overview of the Requirements Management Approach

- Detailed Requirements Management Approach

- Roles and Responsibilities

- Applicable Tools and Methods

25.2   Overview of the Requirements Management Approach

Requirements development and documentation is an iterative process that involves discussions with key SMEs, review of Federal and State legislation and other requirements sources, and review of business processes, as well as application of industry standards. Through this iterative process, the objective is to create requirements that meet the criteria of well-defined requirements and can be baselined.

The diagram below depicts, at a high level, the approach that the Exchange and its BOS vendor teams will use to gather and manage requirements.

Figure 25-3: Requirements Management Approach Overview
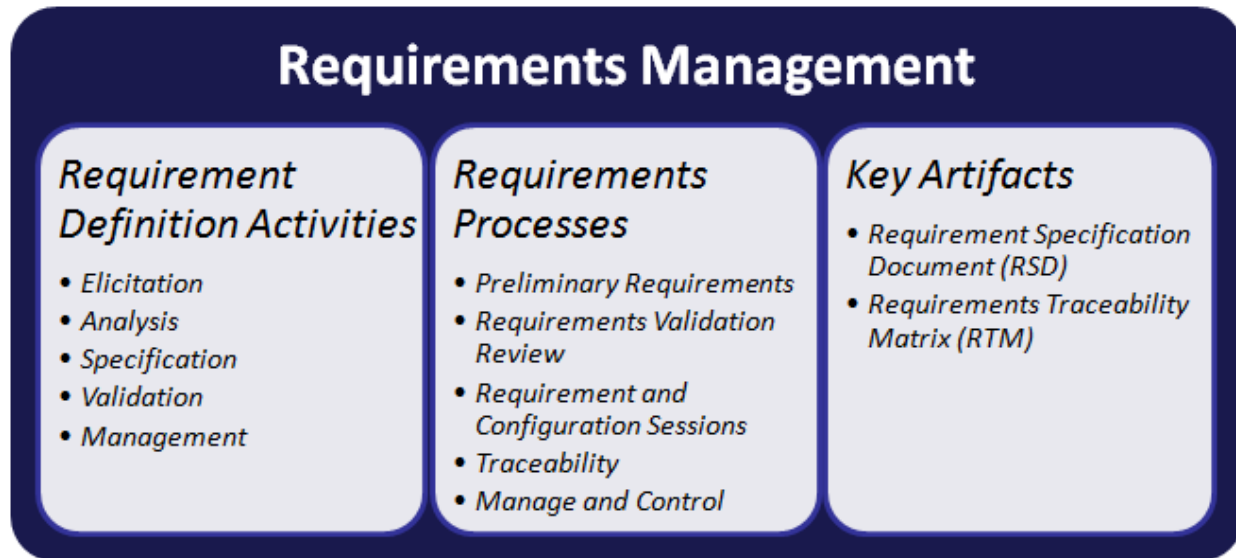
The process of requirements management is broken into the following elements, which are further described in the subsequent section.

# 25.3   Detailed Requirements Management Approach

The Exchange is utilizing a comprehensive requirements engineering methodology to gather and validate the requirements for the BOS, as outlined below.

25.3.1   Requirement Definition Activities

To develop and manage the BOS business and technical solution requirements, the Exchange is following an Agile system development methodology that includes numerous activities aimed at defining and refining the requirements. As illustrated in

Figure 25-4 below, the activities are iterative and provide a means to update and refine the requirements throughout the lifecycle. Each activity is further defined below.

Figure 25-4: Requirement Definition Activities
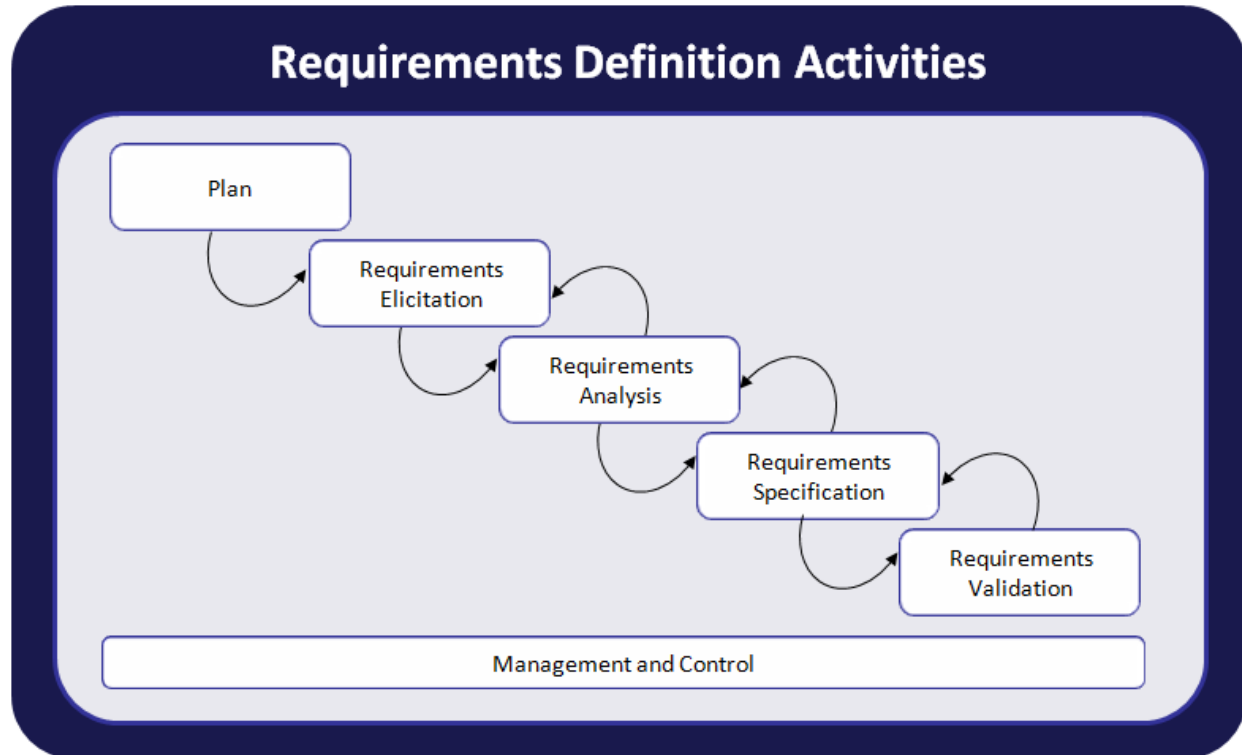
Requirements Elicitation. The focus is on obtaining the requirements from the stakeholders and SMEs who participate in requirements gathering sessions. This activity includes developing preliminary requirements, as well as further defining requirements through Requirement and Configuration (RAC) sessions. In addition, this activity focuses on determining "what" the business needs are. During this activity, there is a need to conduct business process reviews as well. Finally, during this activity, it is important to determine any gaps that may exist between the requirements and the product functionality.

Requirements Analysis. Once the preliminary, initial requirements have been defined, the team conducts an analysis of the requirements and compares them with applicable Federal and State laws and regulations to determine if there are any adjustments that may be needed. In addition, the analysis activity identifies and resolves possible conflicting requirements between the various stakeholders. Requirements analysis involves verifying, estimating and prioritizing newly captured requirements for remaining application lifecycle steps. Finally, this activity helps determine whether the stated requirements are clear, complete, consistent, and unambiguous, and resolve any apparent conflicts.

Requirements Specification. Requirement specification involves developing the narrative that further defines each individual requirement, and documenting the information gathered during the elicitation and analysis discussions. In essence, requirements specification is defined as documentation of the complete description of the behavior of a system to be developed.

Requirements Validation. Once the requirements have been documented, they are reviewed for accuracy and completion by the project team (including the SMEs that provided the requirements). Any gaps identified are addressed and requirements specifications are updated. Validation of preliminary requirements is required, as well as formal sign-off of final requirements.

Requirements Management. Once all the requirements are validated, they are baselined in a requirements management tool. These baselined requirements are used to establish traceability to downstream artifacts (e.g., design elements, test scenarios, and scripts). Finally, the baselined requirements are assigned to the appropriate releases. These baselined requirements also serve as a mechanism through which potential change requests / scope changes can be discussed and prioritized.

25.3.2 Requirements Phases

Based on the general requirement definition activities mentioned above, the Exchange's requirements will be developed, refined, and managed through a series of phases. While initial, preliminary requirements were developed prior to the selection of the BOS vendor, additional phases and their timelines are illustrated in Figure 25-5 and are further defined below.

Figure 25-5: Exchange Requirements Phases and Timeline
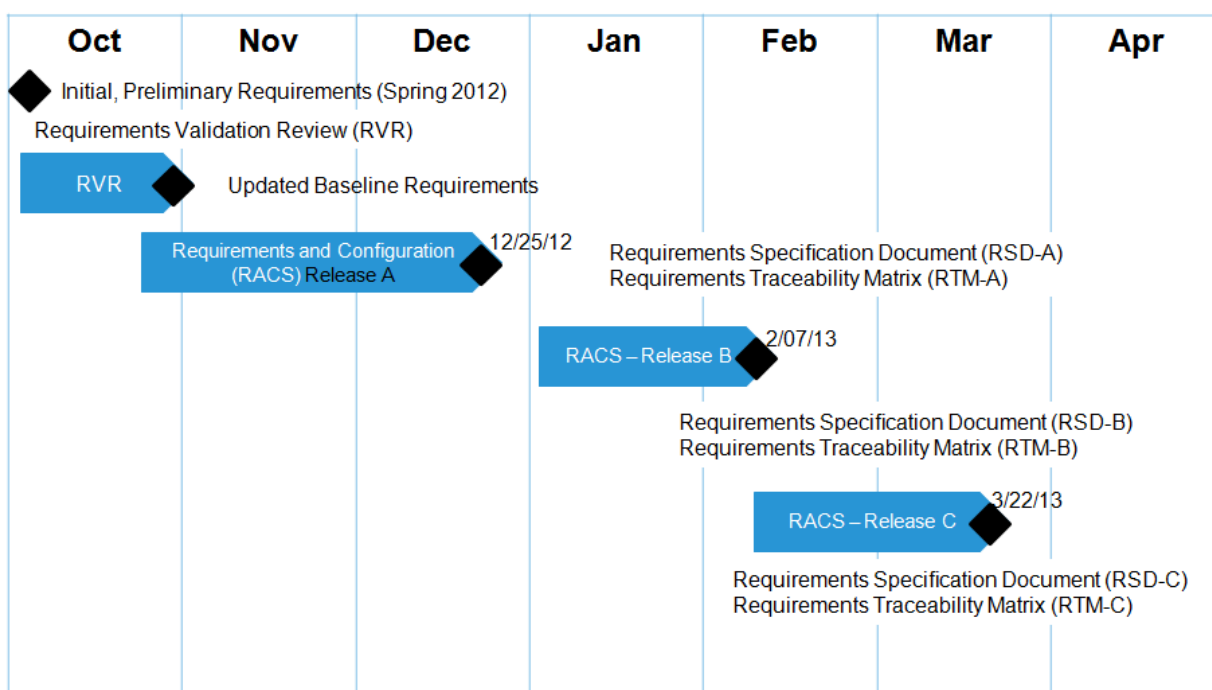
25.3.2.1 Preliminary Requirements

Initial requirements were developed by the Exchange in spring 2012 as the basis for selecting a vendor to build and host the BOS. The Exchange identified these preliminary requirements based on the ACA requirements, Centers for Medicare and Medicaid Services (CMS) guidance, and other State and Federal requirements. The Exchange also leveraged draft requirements identified by other states for comparison and reuse purposes, where applicable.

25.3.2.2 Requirements Validation Review (RVR)

The RVR process will include a thorough review and validation of all requirements specified in the Exchange's BOS Request for Proposal (RFP) Attachment O - Business and Technical Requirements Matrix.[1] The goal of the RVR is to make sure that requirements are consistent, complete, realistic, and

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[1] RFP 2023 (Silver State Health Ins Exchange) FINAL.docx

unambiguous. The RVR will provide the opportunity for the Exchange and BOS vendor to review the original requirements provided in the RFP and verify they are still accurate, and determine whether there have been changes in Federal policy or guidelines. The review will also provide an additional opportunity for the Exchange and BOS vendor to clarify items and address questions prior to initiating downstream requirements activities (e.g., Requirements and Configuration Sessions (RACS)). It will also help identify any missing requirements. In addition, a review of changes to the appropriate programs and policies will be conducted to determine if there are any changes to the requirements. The goal is to reach a baseline of requirements, which then will be used during additional requirement definition and system design activities.

As part of the RVR effort, additional columns will be added to the original requirements spreadsheet (from Attachment O.), so that it can be used to document the requirement status, potential gaps, new requirements, policy decisions, and clarification points that are agreed upon in the RVR session(s). The updated spreadsheet will form the output of the RVR and it will be distributed for approval. This Consolidated Requirements Matrix will then be used as an input to the RAC sessions, where requirements will be further decomposed to generate detailed requirements. These detailed requirements will be documented in the Requirements Specification Document (RSD) and traceability will be provided by the Requirements Traceability Matrix (RTM).

25.3.2.3   Requirements and Configuration Sessions (RACS)

Once the RVR is complete and initial requirements are baselined, the Exchange and BOS vendor will conduct RACS to review the features and functionality of the BOS system to identify areas where the solution must be adapted or enhanced to support the Exchange's business operations. These sessions are organized around the major business functionality, and associated requirements, as outlined in Figure 25-2: Exchange Technical Solution Functions/Components.

There are three primary phases of RAC sessions that align with the project's SDLC, which is following an Agile development approach. For the month leading up to the development sprints, the BOS vendor will conduct RAC sessions with the Exchange to elaborate on requirements targeted for the upcoming sprints. A detailed plan outlining which business topics will be reviewed, the applicable business requirements, required inputs, expected outputs, and key Subject Matter Experts is developed prior to kicking off the phase of RAC sessions. As the RACS are conducted, the BOS vendor will capture the detailed decomposition of business requirements along with process flows, data elements, and context diagrams in User Story documents that trace back to the original business requirements. The final output of each phase of RAC sessions is the RSD for that phase and a snapshot of the Requirements Traceability Matrix. The RSD is a consolidation of the entire set of user stories[2] developed during the RACS phase.

25.3.2.4   Traceability

Throughout the project lifecycle, the Exchange will track requirements from their inception through testing, capturing additions, deletions, and refinements to the business and technical requirements. The Exchange will utilize a standard industry tool, IBM Rational DOORS (referred to as DOORS) as the requirements repository, thus providing a means to track detailed requirements, associated attributes, and downstream project artifacts (e.g., user stories, test scripts).

 DOORS will be used to publish iterations of the RTM, including the following:

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[2] A User Story is the approach taken in the Agile software development methodology of documenting detailed user requirements.

- **Initial Requirements.** Captures the initial requirements, as articulated in the RFP Attachment O, and any edits made during contract negotiations.

- **Post RVR.** Captures updates to the initial requirements based on the outcome of the RVR sessions.

- **Post Release A RACS.** Captures edits and updates based on RACS for Release A functionality.

- **Post Release B RACS.** Captures edits and updates based on requirements and configuration sessions for Release B functionality.

- **Post Release C RACS.** Captures edits and updates based on requirements and configuration sessions for Release C functionality.

To develop the RTM, and to maintain requirements in the tool, the following steps will be conducted:

1) Load the approved baseline business requirements that are the output of the RVR.

2) Establish the tracing and control links:

   a) Verify each Requirement has been associated to at least one User Story, Technical Design Document , Test Condition, and Test Case

   b) Identify if there are Requirement Orphans (requirements that are not traced to downstream artifacts)

   c) Confirm the User Story documentation captures all related Requirements and their associated Design Artifacts

   d) Determine if the Test Results completely, or partially, trace each Requirement to all related Design Artifacts

   e) Verify that the Requirements are fully, or partially, met in the Test Results

3) Choose attributes and detail data required for tracking requirements

4) Choose traceability matrix format and configure in DOORS

5) Identify individuals who will supply each type of link information, and the person who will coordinate the traceability activities

6) Educate the Project Management Office (PMO), Development, Independent Verification and Validation (IV&V), and Test teams on the requirements tracing approach and expectations of data integrity in the requirements repository and RTM

25.3.2.5   Manage and Control

As the Exchange progresses through the SDLC, it anticipates that requirements will evolve as new Federal and State policies are developed, and as new business needs are identified. To control the project's scope, it is important that the Exchange continue to manage the requirements in a manner that prevents scope creep and facilitates the project's on-time completion. The Exchange is utilizing the following methods and activities to manage and control the requirements.

- **Formal Requirements Sign-Off.** The Exchange will formally approve and sign-off on the acceptance of requirements at key points in time. Initially, after conducting the RVR, the Exchange will sign-off on the baseline requirements. These baselined, approved requirements will be used to conduct the RAC sessions associated with one of three software releases. At the completion of each phase of RAC sessions, the Exchange will approve and sign-off on the documentation produced from the RACS, including any changes made to the requirements stemming from the RACS; documentation includes the RSD and updates to the RTM.

- **Change Management/Change Control Processes**. If changes are made to the requirements during the RVR or RAC sessions, and the changes are material (impacting the scope, cost, schedule, or quality of the system) the changes will be managed through a formal Change Management Process. The intent of the Change Management Process is to formally identify, document, and approve changes to requirements and thus the scope of the project. The process also defines the steps taken to document the needed change, submit a Change Request (CR), analyze the impacts, escalate for approval, approve the Change Order (CO), and then execute the approve change order. The process also includes the roles and responsibilities of the various parties, including the Change Control Board (CCB).

25.3.3 Key Artifacts

The Exchange will develop the following key artifacts as part of the requirements management effort.

25.3.3.1 Requirement Specification Document (RSD)

As illustrated in Figure 25-5, a RSD will be developed for each software release in order to document the detailed requirements that were refined during the RAC sessions. The RSD includes the requirements that are needed for design and development of the BOS, specific to a release. The RSD will contain system functional, and non-functional, requirements (e.g., quality attributes, legal and regulatory requirements, standards, performance requirements, and design constraints). The RSD will include requirements pertaining to interfaces that the BOS will have to other systems and agencies.

Once the RSD is complete, it will be utilized by the design and development/configuration team to make appropriate changes to the solution. Additionally, the RSD will be used by the test team to develop test scenarios and test cases.

The RSD is envisioned to be a MS Word document and will contain detailed requirements. These detailed requirements will then be loaded into the RTM (DOORS) and traced to downstream artifacts (e.g., Design elements, test cases.)

25.3.3.2 Requirement Traceability Matrix (RTM)

The RTM artifact is used to trace requirements throughout the SDLC. The RTM captures each of the original requirements (based on Attachment O of the RFP), and changes that are made throughout the project, including those made during contract negotiations, and those revisions that are identified in RVR and RAC sessions. The RTM also maps requirements to downstream artifacts in the software development lifecycle.

In essence, the RTM provides a means to map design elements and test scenarios and cases back to the requirements. The RTM will help determine that all the requirements have been designed and accounted for in the BOS. The test team can use this artifact to map test scenarios and cases to help facilitate testing and validate that all the requirements have been met. The requirements traceability matrix can be used to conduct backward and forward traceability, i.e. a requirement can be traced to a test case and a test case can be traced to a requirement.

25.4   Roles and Responsibilities

The following table identifies the roles and responsibilities related to the Requirements Management Process.

Table 25-3: Requirements Management Roles and Responsibilities

#	Role	Description
1.	Xerox Requirements Team Lead	• Coordinate the overall Requirements Management Process • Develop and execute the RMP • Provide leadership strategy for RVR • Review RVR materials prior to review sessions • Participate in RVR Sessions • Oversee development of requirement repository • Oversee development of the RTM deliverable • Lead and facilitate RACS sessions • Oversee development of the RSD
2.	Xerox Requirements Team	• Facilitate RVR Sessions • Updates the Consolidated Requirements Matrix • Author deliverables, including RVR, RTM, User Stories, and RSD • Create initial repository in DOORS by loading approved requirements from Requirements Validation Review (based on Attachment O) • Updates the RTM as required due to change requests, CMS Gate Reviews, and the normal development of project artifacts that trace to business requirements • Updates the RTM following each phase of RACS • Facilitate and support the RAC sessions • Prepare materials for meetings • Execute the RMP
3.	Xerox Team Leads (e.g., Implementation Lead, Technical Lead)	• Participate in Peer reviews • Participate in RVR, RAC, and other sessions • Provides support and staffing to develop the deliverables

#	Role	Description
4.	Xerox Quality Management Staff	• Conducts internal Xerox reviews of the deliverables and presentation materials and provides feedback to the authors • Reviews the deliverables to validate that they meets the project's quality standards
5.	Exchange Chief Operating Officer and Staff	• Monitor progress and compliance with the RMP • Provides input and guidance on the direction of the overall RVR • Reviews drafts of the RVR sections and provides feedback to the authors • Reviews formally submitted deliverables and determine approval for accepted deliverables • Provides input and guidance on the direction of the overall RTM • Reviews drafts of the RTM sections and provides feedback to the authors • Reviews formally submitted deliverables and determines approval for accepted deliverables

25.5   Applicable Tools and Methods

The following table identifies the applicable tools and methods that will be used to manage the project's requirements.

Table 25-4: Requirements Management Tools and Methods

#	Tool/Method	Description
1.	IBM Rational DOORS	The Requirements Traceability database which will be used by the BOS vendor to track requirements and produce an initial and subsequent Requirements Traceability Matrices.

25.6   Applicable Standards

The following section identifies the applicable standards applied to the requirements management process for the Exchange.

- **IEEE Standard 1233-1998.** This is the IEEE Guide for Developing System Requirements Specifications. This document provides guidance on the development of a System Requirements Specification, covering the identification, organization, presentation, and modification of requirements. It also provides guidance on the characteristics and qualities of requirements.

- **IEEE Standard 830-1998.** IEEE Recommended Practice for Software Requirements Specifications. This document recommends the content and characteristics of a Software Requirements Specification. The document clearly and accurately describes each of the

essential requirements (functions, performance, design constraints, and quality attributes) of the system / software and its external interfaces. Each requirement must be described in such a way that it is feasible and objectively verifiable by a prescribed method.

- **IEEE Standard 1220-1994.** Standard for Application and Management of the Systems Engineering Process, which contains specific guidelines for documenting requirements.

- **PMBOK, Chapter 5 – Scope Management.** This chapter of PMBOK discusses processes, approaches, and tools used to collect and manage requirements as part of the broader scope management process.